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The JOURNAL of GEOGRAPHY

VOLUME XLVIII MARCH, 1949 NUMBER 3

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(Specialists in Business and Economic Education)

Cincinnati New York Chicago San Francisco Dallas

The JOURNAL *of* GEOGRAPHY

GEORGE J. MILLER, *Editor*

THOMAS F. BARTON, *Assistant Editor*

Indiana University, Bloomington, Ind.

Published monthly except June, July and August

PUBLICATION OFFICES: 450-454 AHNAIP STREET, MENASHA, WISCONSIN

Business Correspondence, Membership Dues, and Subscriptions may be sent to Publication office or to

A. J. NYSTROM AND COMPANY
PUBLISHERS, JOURNAL OF GEOGRAPHY
3333 ELSTON AVENUE, CHICAGO 18

Entered as second-class matter January 15, 1919 at the post office of Menasha, Wisconsin under the Act of March 3, 1879.

The JOURNAL *of* GEOGRAPHY

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VOLUME XLVIII MARCH, 1949 NUMBER 3

CRISIS IN WORLD TRADE

CHARLES C. COLBY
University of Chicago

The world has not recovered from World War II as rapidly as most people hoped. We expected that after the war the nations would work together to attain a long period of peace and prosperity. At present, however, the international political situation is most unsatisfactory. We have only the pretense of one world order in which all the nations play a part, and the actuality of two worlds separated by the Iron Curtain. We anticipated some measure of international good will and, instead, find that suspicion and mistrust make international relations difficult, to say the least. We thought that production of food, coal and other essentials would increase rapidly as the economy of Europe and other areas recovered from war-time dislocations. We visualized, most of all, a rapid recovery of world trade and the establishment of an international credit system which would make it possible for any and all nations to participate in world trade. None of these expectations materialized. The lack of recovery in one phase of international relations has blocked or retarded recovery in the others. This is true particularly in the case of world trade. Its recovery awaits better political, economic, and social relations among the nations, and conversely the sluggish nature of world trade increases international friction.

As the present crisis in world trade mirrors the difficulties in the present world order, I invite your attention to the nature of the crisis and to the basic considerations which underlie it. Altho the crisis is revealed by commercial statistics, its magnitude as an international problem grows out of misconceptions as to the function of trade in the world order.

RECENT GAIN IN WORLD TRADE

Substantial gains in world trade were made in 1947. The actual volume was from 10 per cent to 20 per cent greater than that of

1946 and slightly above the level of 1938. In world terms, however, the increase was more apparent than real, for practically all the gains were in the western hemisphere where the volume of trade more than doubled prewar figures. In the eastern hemisphere, gains were made in 1947 as compared with the previous year, but the volume was about 35 per cent less than the prewar level. In this connection it should be remembered that the large prewar trade of Germany and Japan virtually disappeared after the war. In view of the key position of Germany in Europe and of Japan in the Far East, it is difficult to visualize a recovery of trade in the old world without active participation on the part of Germany and Japan. This contention highlights the significance of viewing the world trade, or for that matter any aspect of the world order, in terms of the key areas in the international scene.

According to Britannica Book of the Year, production in half the countries of Europe by the end of 1947 had exceeded prewar levels. Imports from non-European countries still were heavy to replace plant and equipment, and to supplement local production of coal, fertilizers and foods. Thus the inability of these European countries to produce surpluses of their traditional export commodities is an important reason for the slow recovery of world trade.

Many conditions, political, social and economic have a bearing on Europe's slow recovery, but none is more fundamental than the shortage in coal. This shortage has been in the making since 1913. At that time the coal trade of Europe was organized on a rational basis. Germany, for example, imported into its coastal areas 18 million tons of coal largely from England. The coal moved at low cost from England's seaboard mines. On the other hand, Germany exported 44 million tons of coal across its borders to supply the needs of continental countries with little or no coal. This trade was society's mechanism by which resource deficiencies in some areas were supplied by surpluses in others. Since 1913, under the impact of two wars and a depression, the mechanism has never functioned adequately.

Shortage of Coal Retards Recovery

The crisis in trade is tied to and illustrated by the extremely difficult situation in Britain—the traditional heart of world trade. Since the war, Britain has been unable to export enough goods to pay for the imports of raw materials and food desperately

needed for the nation's recovery. Loans from the United States and large shipments of food have alleviated the symptoms but have not cured the patient. Purchases from abroad have been restricted to essentials and plans were made by the government to increase "exports in 1947 to 140 per cent of the 1938 level." Shortages of coal and raw materials defeated the program. Why should Britain be short of coal while it still has abundant reserves? The answer is that the production of coal has steadily declined since 1940. In fact, instead of exporting 74,000,000 tons of coal as was done in 1913, Britain since the last war has not mined enough coal to meet its own demands. This inability to export coal on the part of Britain and Germany is the crux of the European situation because the outflow of coal from these countries in their decades of prosperity before the first world war, helped to balance the inflow of raw materials for their industries. Coal means energy and thus Britain, for example, traditionally exported energy to the coast of Europe, to Italy, to the east coast of South America, and to many lesser areas. This energy was utilized to operate the physical plant without which the coal importing countries could not have produced the foods and raw materials needed by Britain and other countries of Western Europe.

In the brief compass of this paper I cannot go into the causes of Britain's decline in coal production. I am convinced, however, that it is closely tied to the impact of postwar social legislation and perhaps since January, 1947, to ineffective operation of the mines by the National Coal Board, a government agency. Possibly the social and political changes were needed but the timing in terms of Britain's economy and trade has been tragic. This difficulty in Britain, epitomizes the world situation where increasingly the economy of nation after nation is being affected wisely or unwisely by the impact of social reform and political programs. In many cases the result is a lowering of the level of living and a decline in the national income. Mind you, I am not arguing against social and political changes, but I do argue that such changes will not improve the lot of the common man, unless and until they are so projected as not to destroy trade and other mechanism by which society utilizes resources to supply wants.

ROLE OF TRADE IN WORLD ORDER

To meet the present crisis in world trade, society needs a clearer understanding of the role of trade in the world order. When such

understanding is adequately disseminated, better international policies should be forthcoming.

Foreign trade consists of a series of transactions between the people of two or more countries and of the financial accommodations behind those transactions. To the men who handle the business, foreign trade is a matter of profit. To the nations involved, trade means the presence of commodities and services essential to the welfare and standard of living of their nationals. World trade implies that all nations participate and this means trade between nations and among the nations. In this connection it is well to remember Sargent's statement of many years standing, that in world trade, the whole is balanced but not the parts. At present, as has been said, we have only the pretense of one world, and the actuality of two. Thus under existing conditions there can be no trade in world dimensions, no balancing of the whole, for the parts are not cooperating. Can there be a satisfactory substitute? That is, can the maritime nations facing the Atlantic and Pacific oceans develop satisfactory trade without the participation of the vast continental area under the flag of the Soviet Union? To advance our thought, I shall attempt to formulate two fundamental laws of economic geography and then suggest their bearing on the present international crisis.

Trade, either domestic or foreign, is a functional adjustment to two laws, namely, the law of continuity of human wants and the law of irregularity in resource patterns. Or in other words, trade is a means of bringing the irregular distribution of resources into harmony with the continuing needs of society.

Law of Continuity of Wants

The law of continuity of wants pervades every phase of modern life. Human wants are ever with us. The wants of today repeat the wants of yesterday and forecast the wants of tomorrow. In satisfying these never-ending wants, society has built a complex physical plant into and upon the natural landscape, has developed the whole range of modern techniques and methods, and has come into possession of numerous customs, social attitudes and legal measures: all these must integrate into a functioning whole if the wants even of a single commodity are to be met. For example, the gas for your car is the end result of a long and complex series of installations and services organized and directed by corporate

administrations, and protected by the agencies of local, state and federal governments. As oil resources are not spaced evenly in this country or in the world, trade and the associated transportation facilities are essential parts of the whole structure. They adjust the dynamic phenomena of wants to the more nearly static phenomena of pattern.

LAW OF IRREGULAR SPACING OF NATURAL RESOURCES

The law of irregular spacing of natural resources is a law of nature. Resources are where they are and if man wants them he must come and get them. These facts are axiomatic in geographic thought. We take them seriously and are perplexed, and at times disheartened when they are given little or no attention by framers of administration or legislative measures. We argue that if governmental or other policies interfere with the utilization of resources and the trade by which the products of resources are distributed, the policies should be changed.

INTERACTION OF THE TWO LAWS

Britain's apple suply in normal times illustrates the interaction of the two laws under discussion. Apples are sold in Britain's food shops every month of the year. This illustrates the law of continuity of wants. To make this possible, apples are drawn according to ripening season from producing districts in England, France, Canada, the United States, Australia, Tasmania and other countries. Conditions suitable for commercial apple culture are highly localized and the producing districts are widely and irregularly spaced. This illustrates the law of irregularity of resource patterns. As the fruit of these districts come into harvest at different seasons, the agencies of trade and transportation can deliver apples in England from month to month thruout the year.

Apple culture in any district is undertaken by orchardists who on the one hand believe that their sites possess the conditions essential for commercial apple production, and on the other are convinced that the demand for apples will continue for the 15 or more years before the trees begin to bear, and for the 20 to 50 years that the trees may produce after they come into bearing.

As the apples ripen in any district, one of two things must happen. If the apples are not picked, eventually they will fall to the ground under the law of gravity. Or in response to the law

of continuity of wants the fruit may be picked, graded, packed and shipped to market. It moves from the producing areas to the consumer by means of the agencies of trade and transportation, or in geographic terms, by the integrated series of adjustments by means of which the desired end for society is attained.

TRADE AND INTERNATIONAL BOUNDARIES

In view of the continuing wants of modern life, the irregular distribution of earth conditions and earth resources, and the existing pattern of national units, it is clear that some trade must cross international lines. The commodities in demand and the resources from which they are produced, in many cases, are not on the same side of an international boundary. No nation is in possession of all the resources and all the technology required to supply the continuing wants of its people. Either the wants go unsatisfied or trade crosses the frontiers. As has been said elsewhere, if trade does not cross international boundaries, armies will.

Under the present emphasis on extreme nationalism with its accompanying high tariffs, quotas, and other controls, the flow of trade across international boundaries is so channeled and restricted that it does not accomplish its true function of organizing widely distributed resources to help supply the wants of the world's population. At present, as has been said, international trade largely is between nations rather than among all the nations. Thus the whole cannot be in balance because the parts are not functioning. If this principle were widely understood, policies might be forthcoming under which international boundaries would become pumping stations to accelerate the flow of international trade, rather than retarding dams or barriers as they are today.

If the Iron Curtain continues to divide the world into two operating units, which unit has the best promise of succeeding under the laws of economic geography? In terms of restrictions on the flow of trade within its sphere of operation, the U.S.S.R. with its all-powerful central government might have the best of it. Presumably, within the Soviet territory, trade is not retarded by political lines. Apparently, however, it is profoundly influenced by government action. One may argue that the law of continuity of wants, as applied to the needs of all the people, is disregarded. In terms of favoring natural conditions, most of the Soviet territory lies north of the latitude of the northern boundary of the

United States. This means that either the Soviet people must go without tropical and lower middle latitude products, or they must resort to trade to get them. Modern technological developments in the U.S.S.R. are limited to a relatively few areas and thus only a few parts of the country are ready to function as parts of a national property geared to twentieth century needs. Confined within their national frontiers the Soviet level of living, individually and collectively, will be lower than if they relied on international trade to supplement and enrich their domestic production and trade.

The world outside the Iron Curtain on the one hand has the disadvantage of numerous and zealously regarded national boundaries and on the other the advantage of greater and more diversified resources of land and men. Most modern technology is confined to Western Europe and the United States. It's one thing to be ambitious for modern technology and quite another to have it already installed and in operation. If the United States and Western Europe find a satisfactory plan of procedure, they will command most of the world's large technological developments.

In terms of natural resources and earth conditions which promote the utilization of resources, the countries outside the Iron Curtain have a distinct advantage. For example, probably 75 per cent of the world's mineral resources are controlled from New York and London. In amount and variety of timber, in arable land, in fisheries, in grazing lands and in natural accessibility the maritime countries have superior assets. The same holds true for their position in science, engineering, education and religion. The one great need, therefore, is an international program to which the western nations can adhere with confidence and profit. Is there sufficient understanding of fundamentals, sufficient international tolerance, and sufficient determination to make possible the development of such a program? That is the $64 question, the supreme issue of our time.

INTERNATIONAL ISSUES OF THE FIRST ORDER OF IMPORTANCE

In considering the question of international relations of the Atlantic and Pacific nations, I am convinced that a wise way to begin would be to concentrate on issues that are truly international in character. Ocean trade and air transportation concern all the nations and thus are international matters of the first order of

importance. International credit, trans-oceanic communication, and international law are in the same category. Perhaps most important of all is the international action which will be required if religious freedom and individual liberty are to be preserved. If the Soviet program had succeeded in Italy, what would have become of the time-honored seat of the Catholic division of Christianity? If the coastal low lands, enlivened and enriched by the Reformation, come into Soviet jurisdiction, what will be the fate of the Protestant Church in Europe? These questions are international issues of the first order and are squarely before the world today.

Under my thesis, a program to promote world trade would help solve many of the current international problems. It is a logical line of attack. Because of the influence now exercised by the United States, and the United Kingdom, these countries are the logical areas from which to launch the attack. Because geography is one of the fields of learning which leads to understanding of the areas and issues involved in world trade and other international matters, it should contribute notably in the formulation of the desired program and policy.

SLOW APPEARANCE OF EFFECTIVE FOREIGN POLICIES IN AMERICA

If you become impatient at the slow appearance of effective American foreign policies, please remember that the people of the United States are not internationally minded. We have not learned that relations with other nations may have a decisive bearing on our welfare. As yet, we may not agree with the assertion of the editor of *Barron's National Business and Financial Weekly* that "every nation in the world, past and present, has had to learn at one point or another in its history of the supremacy of foreign over domestic affairs." He argues that "it is foreign policy that makes history" and that "the difference between bad and good foreign policy is often the difference between disaster and happiness, death and survival."

In the early period of our national life, that is before the Congress of Vienna in 1815 initiated a century of world peace, our leaders and our people in general were much concerned with foreign affairs. This knowledge was of immense value from 1776 to 1815 when the young nation struggled to maintain an existence during Napoleon's attempts to gain control of Europe. Our idea, as voiced by Washington, of keeping free of European entangle-

ments, was a wise policy for a young country during troubled times.

In the world order of the 19th century, the United States gave primary attention to domestic problems, more especially to consolidating its territory, to the settling of its vast area, and to the development of its resources. The resulting production of cotton, grain and raw materials created a huge surplus for export. The nation had a continental or domestic emphasis, and developed no major foreign policy except the doctrine enunciated by Munroe. Altho this regional bid for peace in the New World affronted the diplomats of Europe, it was in harmony with the British policy of world trade and both nations profited accordingly.

During the 19th century, Americans made discovery after discovery in the technologies of agriculture, industry, and engineering. Our record of invention is unique in the history of civilization. As other nations bought our products, largely financed our international transactions, and transported our foreign trade, we gave little or no thought to international relations. The geography of that time concerned itself briefly and brilliantly with western surveys and exploration, but until the turn of the century, economic geography and other aspects of modern geography almost were unknown.

Then came 1914. After a century of peace, Germany felt strong enough to challenge the world order. The United States moved rapidly thru World War I, a postwar boom, a great depression, and World War II. We learned in tragic fashion of the impact of foreign affairs on our national life. We tried to improvise a workable foreign policy but the understanding on which such a policy should have been based was conspicuous by its absence. After the first war we retreated into normalcy and provincialism. Since the second war we have squandered money and effort in honest attempts to bring order out of chaos in Europe and the Far East, areas so complex that no American or group of Americans can claim to understand them. Progress has been made, but not enough. The wants continue, the resources of men and land are available, but the human intelligence to organize the one to serve the other is lacking. This is the real reason for the present crisis in world trade, and for that matter, for the other crises in international relations.

Our foreign policies and our foreign relations will improve with experience. As in Washington's time, our leaders and our people

are awake to the issues. But we also must learn thru education. If knowledge is power, then we need infinitely more knowledge. We need the right rather than the wrong system of education. We must have more truth and less propaganda in our curriculum. The Social Sciences are diffusing their energies in fruitless attempts to study and teach all knowledge at once. Some seem to want knowledge put up like candy bars in chocolate coated parcels. What we need in facing the grave national and international problems of our time is better disciplined minds. We must move on to a system of functional education under which minds will be trained to reason and to follow reason and thus gain understanding. Even understanding is not enough. We must learn how to implement understanding, that is to utilize understanding in the solution of problems and the development of policies.

Geography Breeds Understanding of World Trade Problems

What has geography to offer in a functional system of education which will breed intelligence and understanding of world problems? The answer is clear, it can offer one of the major understandings, that is the understanding of the laws, principles and implications of pattern in the world order. Such understanding makes clear that just as self-preservation is the first law of life for the individual, the organization of natural and human resources to meet the continuing wants of mankind, is the major problem of society at present and probably in the future.

Geography has made amazing progress since the turn of the century. As a discipline, however, it has not come of age. We need specialists on any and all parts of the world, specialists who can speak with the authority of deep understanding of the interreaction of men and land in the areas they represent. We need to develop the systematic aspects of geography. Physical geography needs a complete overhauling in competent geographic hands. Historical geography offers challenging opportunities and problems. Political geography at long last has competent leadership but needs time, money and brains in large quantities. It is hardly necessary to tell this audience that educational geography cries for attention and expert cultivation. Furthermore, economic geography needs new definition and new emphasis. For example, we have tried to show here that world trade is an essential part of the organization of resources and that an understanding of world trade, the organization of resources, and the continuity of wants are gained by study-

ing geography, especially economic geography.

In conclusion may I repeat, that geography has made great progress but not enough. The demand for geographic talent has outrun the supply. The value of geographic thought, geographic teaching and geographic research is widely and increasingly recognized. We need apologize to no man or no discipline. However, we need to learn how to recruit students who have the spark of talent for geographic thinking. We must have more research and better teaching. We must be ready to utilize our knowledge and understanding in the solution of the problems of our time. Just as at present there is a crisis in world trade, there also is a crisis in geography, a crisis calling for rapid and effective improvement. Each of us can help with better thinking, better study, and better teaching.

FINLAND—BRIDGE TO THE ATLANTIC*

EUGENE VAN CLEEF
Ohio State University

The fact that the peoples of Europe for centuries have struggled with each other for economic survival and for positions of dominance is common knowledge. As settlement has been effected and group consciousness has evolved into a spirit of nationalism we have become not only increasingly aware of the political transformation of Europe but have found ourselves inescapably destined to become increasingly involved in the resultant complications. As we at first largely performed the role of observers and ultimately became participants in European affairs, we have seemed to view events with deep emotion and interpreted them in the light of current sequences. This reaction has led us from time to time into well intentioned but misguided acts for which we are paying a considerable price today and which may yet cost needlessly tremendous burdens for generations yet to come. We have failed to take into adequate consideration (1) trends of the past, (2) the geographic settings of the respective peoples, and (3) the basis upon which the various nations of Europe plan for their future. In the light of our own heritage and the large percentage of our current population which is foreign born it seems nothing short of amazing that we have shown such slight comprehension of the

* Presented at Chicago meeting, National Council of Geography Teachers, November 27, 1948.

operation of the European mind. Enthusiasm for death in the fight for one's country; resignation to the justification of autocratic power; ready rationalization of illogical situations—these are only a few of the mental attitudes we must try to comprehend.

In discussing the rôle of Finland in European affairs I can choose to analyze the problem with reference to my personal emotions, or to assume an objective point of view. Obviously, the latter choice is the proper scientific one and that I desire to pursue. I doubt that anyone has expressed greater admiration for the Finns than have I and perhaps few other non-Finns have spent as much time in attempting to gain a sympathetic understanding of their behavior both in Finland and in the United States. I emphasize this relationship in the hope of dispelling any feeling that I might be naturally prejudiced in my interpretation of Finland's past behavior and its likely future fate. I propose to consider Finland in the light of its history, its geographical setting, and *both* of these elements in the presence of the animal, man.

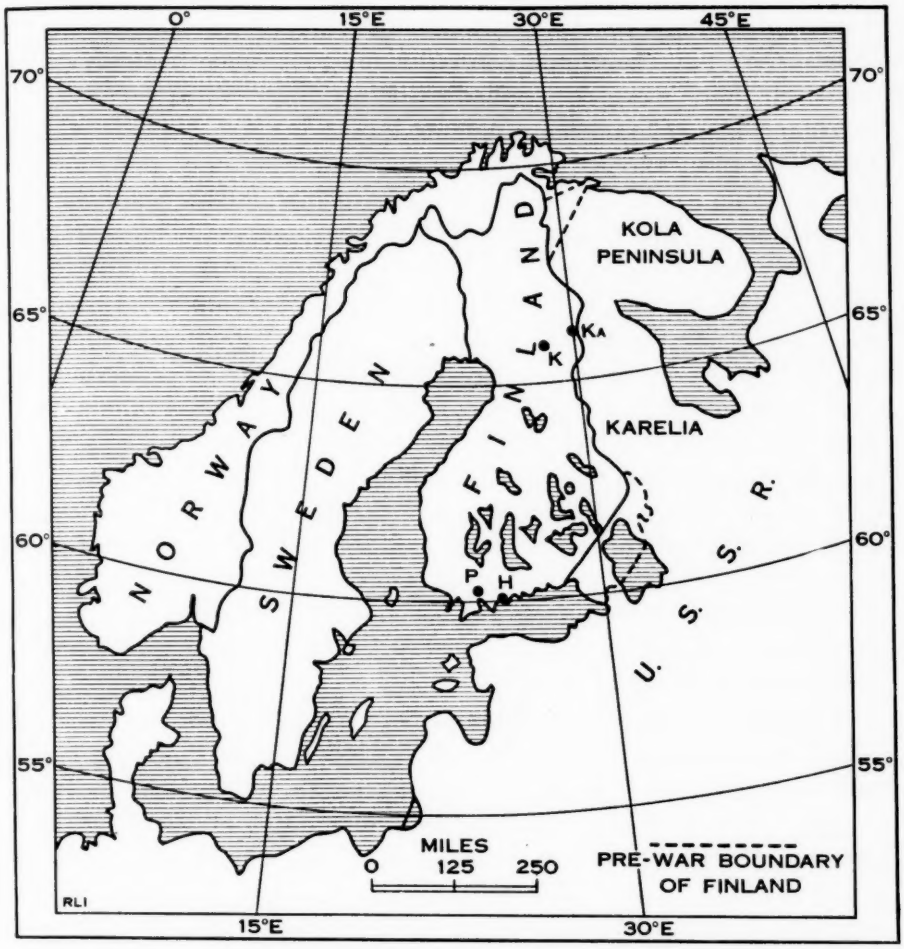
ORIENTATION

If you take a quick glance at the map of Europe to refresh your minds with reference to Finland's location, you will note that it is thrust between northwestern U.S.S.R. and the Scandinavian Peninsula, its land connection interrupted partially by the elongated Gulf of Bothnia. But this orientation is political; of greater significance is the fact that its area is a westward continuation of the plain of the U.S.S.R. there being no places along its eastern border which constitute reasonably good natural boundaries.

The orientation I have just described is that of the summer season. Were we to note the winter situation we should find that with the freezing of the Gulf of Bothnia on the west and the Gulf of Finland on the south, freezing which yields ice several feet in thickness, at times capable of supporting heavy vehicles, we should find the region, even more so than in summer to be a continuation of the U.S.S.R. and more closely related physiographically to both Sweden and the New Baltic States.

The Finns themselves refer to their country as "intermediate between Scandinavian and Eastern Europe. Its relief is intermediate between the Scandinavian Mountains and the East European plains. The flora and fauna show a mixture of both western and eastern elements and even ethnographically this position has left permanent marks on the country."

Geologically, Finland is an eastern extension of Fenno-Scandia, whose eastern limit lies in Karelian U.S.S.R. Here again we find no distinctive elements which might be used to delimit Finland politically from its neighbors.



The Fenno-Scandian Region (Includes Norway, Sweden, Finland and the Korelian area of the U.S.S.R. and the Kola Peninsula) H = Helsinki, P = Porkkala, K = Kemijärvi, Ka = Kandalaksha. The western boundary of the U.S.S.R. is not indicated as it is still a matter of uncertainty.

EARLY SOVEREIGNTY

Finland seems to have been first occupied by Lapps and later by Finns who first entered the region via the Gulf of Finland about 100 A.D. The history of the Finns in this early period is still ob-

scure. We can trace the Finns as a political body with considerable clarity from 1154 A.D. when the Swedes under the guise of crusaders conquered them. Those who occupied western Finland seemingly offered no opposition to the Swedish invasion but the Karelian Finns near Lake Ladoga did not extend a welcome hand. All the Finns ultimately revealed a spirit of independence whatever its origin may have been and offered some resistance to the Swedes. Their protests were recognized by King John III of Sweden and he, being a good politician, granted Finland the status of Grand Duchy in 1581. Basically this gift of semi-autonomy was made in appreciation of the aid rendered by the Finns during a long series of conflicts between the Swedes and the Russians. The boundary line between Finland and Russia, which remained undisturbed until 1940, was established by the peace of Stalbowa signed in 1617 by the Swedes and the Russians.

The physical status of the Grand Duchy of Finland became that of a buffer state between Sweden and Russia. The people fared reasonably well under Swedish control but when the Swedes and Russians met in a climax conflict in 1808-9, the Finns were caught again in an uncomfortable position. This time the Russians were victors, but recognizing the value of Finland as a buffer, as well as Finnish love of independence, did nothing to disturb that country's Duchy status even tho Sweden had to recognize Russia's sovereignty over Finland according to the terms of the Peace of Fredrickshamn, signed in 1809.

Russian dominance of Finland between 1809 and 1917 was not always agreeable to the Finns, but with few exceptions the Finns got along reasonably well. We do not have time to trace the details of this period. It is significant that altho there was essentially physical continuity between Sweden and Russia, virtually thruout the whole period of Finnish history, there seemed to be no desire on the part of either Sweden or Russia to eliminate Finland politically. This came about largely because the *people,* of Finland, *not* the land, were unique; people who stood courageously for individual independence, undaunted by threats from without.

Independence, 1918-1944

World War I marked the collapse of the old Czaristic regime, and afforded the Finns an opportunity to establish their independence. In the early years of their national existence, their neighbors to the south, Latvia, and Estonia who had also gained

their independence about the same time supported a military defense alliance against the U.S.S.R. and were desirous that Finland become a party to this arrangement. But the Finns recognizing their own precarious state saw that the new Baltic States were in a still less favorable location with reference to the U.S.S.R. and that efforts by the U.S.S.R. ultimately to retrieve Latvia and Estonia would be much more likely than an attack upon themselves. Furthermore, they had closer ties with Sweden than had the more southerly nations and they felt it would be to their interest to avoid any alliance not approved by the Swedes. Nor did they wish to give the Soviet Union any grounds, openly at least, for thinking that Finland did not intend to go along on friendly terms. Accordingly the proposal for alliance was rejected. That this was good judgment has been repeatedly demonstrated down to the present day.

Under the terms of the treaty of Dorpat signed by the Finns and Soviets in 1920, the territory of Petsamo with frontage upon the Arctic Ocean was ceded to Finland. But the Soviets reserved the right to cross this region at will except on military missions. The northeastern extension of Petsamo separated the U.S.S.R. from Norway. This arrangement was never quite satisfactory to Soviet interests and when a peace treaty was signed after the Finnish-Soviet war of 1939-40, the Finns were forced to return the province of Petsamo. Thus Soviet land lines of communication with Norway were no longer subject to Finnish accommodation. Furthermore, the treaty provided "to the Soviet Union goods transit rights between the Soviet Union and Sweden . . . by the shortest railway route" and for this "the Soviet Union and Finland regard as necessary the construction . . . of a railway connecting Kandalaksha with Kemijärvi." In this action the Soviets sought further to improve their means of communication with the Scandinavian countries and the Atlantic via Finland.

In 1944 with the withdrawal of Finland from the war against the United Nations, Finland was required in an armistice agreement to cede territory to the U.S.S.R. This time two critical localities were involved. One was just north of the "waist-line" along the eastern border where some contraction became a requirement. The second area involved the port of Porkkala just west of Helsinki. The Soviets took a fifty year lease on the latter site for the establishment of a naval base. At the same time it renounced its thirty year lease on the peninsula of Hanko in Southwestern Finland.

We may add parenthetically, that the Soviets reserve "the right of unimpeded use of all forms of communication between the Soviet Union and the territory leased in the area of Porkkala."

Outlet to the Sea

Familiar to everyone has been the long search by the Russians for an ice-free port and convenient access to the world's major trade routes. As we look back over nearly a century and a half of Russian-Finnish relations, details of which have necessarily been omitted from this paper, we can appreciate the fact that the Russians, and their successors, the Soviets, have never lost sight of the possibility of using Finland a a bridge to Scandinavia and ultimately to the Atlantic. For recent supplementary evidence we might cite the economic treaty made with Sweden after World War II calling for the creation of credits to the amount of $300,000,000. This has greatly embarrassed Sweden. The Swedes are worried, not without cause. They are now more accessible to the U.S.S.R. than ever before and while seeking to avoid irritating the Soviets, they strive to console themselves by laying great stress upon their intention to continue a policy of neutrality in world military affairs.

Just as the Soviets see Finland as a route to Scandinavia and ice-free ports, so Sweden and Norway appreciate the great possibility of Soviet utilization of this bridge. Finland, of course, is not unmindful of its potential convenience to the U.S.S.R. And none of these small northern countries can master sufficient military resistance to avoid occupance should the Soviets decide to move.

Geographically viewed, no extended argument seems necessary to demonstrate the continuity of the U.S.S.R. and Finland. If the boundary of the U.S.S.R. were to be moved to coincide with the western boundary of Finland, there would be little logic in stopping it there. The ultimate line would appear at the Atlantic Coast and that line seems not beyond the serious consideration of the Soviet regime.

One might ask why the Russians did not move toward the Atlantic via Finland long ago? One can only conjecture an answer; but the probabilities are that they feared the power of both Great Britain and Germany, and that the concentration of their own population and economic wealth in southern areas in a period when the means of transportation were less efficient than today, made

this northwestern exit less desirable at the time than other potentialities.

There is a possible off-set to the immediate or prospective use of Finland as a bridge to the open Atlantic. If the U.S.S.R. succeeds in achieving the goal Germany has sought since the Franco-Prussian war, namely, "Berlin to Baghdad," or if it should overwhelm Western Europe, thereby gaining a front on the Atlantic, then it may be satisfied to tolerate Finland awhile longer. On the other hand, control of either the Berlin to Baghdad route or Western Europe would afford the U.S.S.R. opportunity to dominate all of Europe, and then Finland would fall very fast.

The outlook is not cheerful for the Finns nor for those of us who are sympathetic toward a people who seek to work out their own destiny and who seem to be deserving of our moral support. But man is still a cruel animal readily resorting to brute force to gain his selfish objectives if he feels he possesses adequate strength to do so. Until man becomes civilized it would appear that the Finns must resign themselves to ultimate absorption by the Soviet who seem destined to use Finland as a bridge to the Atlantic.

AIR TRANSPORTATION—WORLD COVERAGE

G. ETZEL PEARCY
Trans World Airline

The present world coverage of commercial air routes is far greater than most of us suppose. At thousands of airports on the six habitable continents planes are landing and taking off and changing the face of the earth. In the terminology of aviation folks, the skies are full of passenger-miles and ton-miles—billions of them—as people, mail, and goods move rapidly from one spot on the world's surface to another. And without suffering the physical handicaps presented by barriers on that surface to any great extent. These "run-of-the-mill" services, performed every hour of every day in all parts of the world are the potent forces behind what we may call the "Air Age."

The pattern of postwar flying is taking shape, or, in many cases, has already been established. Therefore, we are in a position to re-evaluate some of our ideas of the Air Age, and to discard some of the misconceptions built up in the past:

1. Some air age enthusiasts have been inclined to exaggerate the importance of over-the-pole flying. Granted the shortest route between Washington and Chungking tops the North Pole. But to fly such an itinerary would, from an economic standpoint, be highly illogical. It is rather well accepted among commercial aviation people that air routes will follow established traffic arteries for a good while to come, altho total route distances may add up to hundreds, or even thousands, of additional miles.

2. The "ocean-of-the-air" concept has been overworked. While the airplane can easily surmount barriers of the physical landscape, it is not economically feasible to fly long distances (as from one continent to another) except from certain selected international termini. Thus, the various nations of the world have and will continue to have relatively few points within their borders, usually only one, from which most international flights originate and terminate.

3. The mere fact that airplanes can rapidly go from one country to another does not mean that we will automatically have an ideally unified world and universal peace. Suspicion, distrust, and strong nationalistic feelings may travel the airways as well as goodwill and understanding. Our objective, then, must be to gradually break down the prejudices between peoples by a million international passengers, by a million pieces of mail with cancelled stamps from another country, and by a million commodities sent via air cargo.

4. The modern Air Age is not to be found in the Sunday Supplement. It does not lie in rockets to the moon, in milk delivery by heliocopters, or 300-passenger ships flying at supersonic speeds. Such marvels may well come to pass at a future date, but for the moment they are impractical. More symbolic of the true Air Age is the fellow in white coveralls handing packages up into the cargo compartment of a plane; the flashing of a beacon which lights the way of Flight 63 on its nocturnal way to Indianapolis; the slick black limousine packed with business men, slithering its way between a downtown hotel and the airport; or the maintenance man on his rounds checking the landing strips at Singapore.

Perhaps if we look at the development of commercial air transportation as it is taking place around the globe we can better appreciate the resultant economic, political, and social changes among the population. Too often we do not look beyond the borders of our own country for such changes. Most of us are more or less aware of the extent to which airplanes come and go in the United States, but fail to recognize the tremendous activity taking place in many other parts of the world—oftentimes in areas we thoughtlessly classify as primitive and backward.

At the moment there are around 240 commercial airlines in the world offering regularly scheduled service. Aircraft of these organizations represent the flags of more than seventy-five different countries and possessions. Among the conglomeration of airlines are some which are world wide in their scope, such as Trans World Airline with a route pattern extending from San Francisco eastward to Bombay. At the other end of the scale small regional carriers may feed traffic into important termini or make accessible remote spots poorly served by means of surface transportation. For example, Leavens Brothers Air Services in Ontario connects

two termini only twenty-two miles apart, one on a small island in Lake Erie. But large or small, these 240 air carriers all go to form the gigantic mosaic of global air routes that now span the continents and cross the oceans of the world.

POLITICAL PHILOSOPHY AND AIRLINES

The political philosophy of a country frequently determines the air pattern and aviation policy for both internal and international flying. Some of the more important countries of the world have a dozen or more individual airlines; others have but one. The United States and most of the other nations of the Western Hemisphere advocate free enterprise in air transportation; consequently the routes of a great number of different airlines crisscross thru their airways. On the other hand, if air transportation in a country is government owned, government operated, or government controlled it is likely that the flag carriers will be monopolies, or "chosen instruments." Most European countries have a single airline representing national interests. Air France, Sabena (Belgium), KLM (The Netherlands), Iberia (Spain), and Swissair are examples of important airlines without competition except that from air carriers representing flags other than their own. Great Britain has three major airlines, but each is allotted its own geographical sphere of influence in which to operate.

A number of the airlines in the global system of routes represent political entities far removed from the important capitals of the world. Nevertheless, they fill vital gaps in the overall transportation pattern, oftentimes having come into being where surface transportation was slow and cumbersome, or virtually nonexistent. In Iceland the Flugfelag Islands Airline fans out from Reykjavik to settlements rimming the coast of the North Atlantic island. Altogether Iceland has a population no greater than Wilmington, Delaware, but over it has been developed a full fledged air transportation system. Far to the south in the same ocean the Bahamas Airways snugly ties together the more important islands of that archipelago. In the midst of the Mediterranean Sea the tiny island of Malta is now closely in touch with the mainland, both north and south, by means of the airline, Air Malta. Routes extend from this insular possession of Britain to Rome, Palermo, and Catania in Italy and to Tunis in Tunisia. Even the new dominion of Pakistan already has its own air route, tying its two principal cities, Lahore and Karachi, to Delhi, capital of neighboring India.

Australia

Looking to Australia one can see that the air transportation pattern of that continent is remolding the whole economy of the country. With but seven million people in an area as large as the United States, the country has long suffered because of great distances in relation to its industrial and commercial development. Now, a total of sixteen Australian airlines span the continent and form a network of routes which take in virtually every habitable area. Three of the airlines are transcontinental, and the remainder are regional. The latter permit a group, or "circuit" of cities with similar interests to more closely integrate their energies in the creation of stronger regional ties.

Key cities in Australia, such as Melbourne, Sydney, Brisbane, Canberra, Adelaide, and Perth are linked together with multiple schedules daily. Frequency of service between Melbourne and Sydney is not unlike that between two major American cities. But beyond this type of flight, scores of small communities now have a regular and dependable means of transportation to replace remoteness and isolation. In the desert heart of Australia the leading center of Alice Springs lies on the most important north-south transcontinental route in the interior of the country. To the south a railroad carries three trains weekly into Adelaide; to the north only a highway leads into Darwin. But from Alice Springs air routes extend in all directions and tie dozens of tiny desert communities into a regional pattern. In turn, Alice Springs itself is tied in with the larger Australian cities, thereby giving the most out-of-the-way desert dweller convenient access to his choice of commercial, financial, political, or cultural centers.

Africa

If one were to examine an air route map of Africa he would find around a score of cities, the names of which do not appear on the National Geographic map of Africa, in the large Encyclopedia Britannica Atlas, in the large Rand McNally's Commercial Altas, or in the Oxford Advanced Atlas. And yet these cities have regularly scheduled air service, much like Peoria and Paducah in our own country. If one were to travel in Africa he would find new cities springing up or old ones being developed along remarkably modern lines. To stand on the African plateau in the middle of a city of fifteen or twenty thousand population is a revelation—one would have no difficulty in believing he were in an American city

of the same size. Thus, Africa is not only experiencing the Air Age, but experiencing it in a more startling fashion than is the average American, who, in theory at least, is supposed to be accustomed to technical advancement.

For many years European airlines have penetrated African territory, tying colonial areas with the national capitals of the home country. But more recently local airlines have supplemented these intercontinental trunk line services. The case of Ethiopian Air Lines will serve to illustrate this type of development. Less than three years ago Addis Ababa was tied to Cairo on the north and Nairobi on the south by the new American-inspired airline. In addition, spur lines were extended out from the capital city to a number of small Ethiopian cities, such as Gimma, Gondar, Gore, and Debra Marcos. Internal surface transportation in the country is of the poorest sort, and travel is slow or sometimes nearly impossible. A hundred mile trip by road might take days or even weeks, for it could demand the rebuilding of bridges to get across streams or pulling animals or vehicles thru deep mud. But now residents of these small air termini may, and do, climb into a plane and in a few minutes be up and away to places previously considered far distant. As likely as not the passengers will be barefooted, and with them they probably take small livestock or items of produce (the interiors of these locally used planes are not finished in cushioned upholstery, but carry bucket seats). Despite the high cost of air transportation in Ethiopia this type of travel is going on with the obvious result that the inhabitants are depending more and more on the airplane.

Africa also furnishes many other evidences of advancement in air transportation. The Belgian Congo was once a region so hard to traverse that it awed men by its mystery—here was the darkest part of the Dark Continent. As it was opened up the rivers and streams—not railroads and highways—became the leading arteries of commerce. But now both European and regional air routes form a network over the area. Cities such as Stanleyville, Elizabethville, Leopoldville, Albertville, and Coquilhatville are not merely air stops, they are nodal points from which routes extend in several directions in the overall pattern.

The French have long since stopped trying to push a railroad across the Sahara. Nine different airlines now traverse this huge barren expanse, their parallel north-south routes lying between the Atlantic Coastal zone and the Nile River valley. A few

hours after a southbound passenger gets his last look at the Mediterranean he can sight the green of the Niger country in French West Africa. Conforming to the same viewpoint the British no longer actively promote their great Cairo-to-Capetown rail project. It is far easier to lay out an airway across Africa than it is to build a railroad with its interminable series of grades, bridges, tunnels, sidings, stations, water tanks, supply depots, and other attendant items.

South America

Many stirring examples of air transportation in a wild country springs from the mountains, tropical rainforest, and savanna lands of South America. In the West Coast countries are mining communities almost solely dependent upon the airplane. The necessity of a week of tedious travel between Colombia's chief seaport (Barranquilla) and its capital (Bogota) has been supplanted by two or three comfortable hours in the air.

Brazil, with its limited rail and highway facilities fringing the coast, now has a pattern of air routes tapping cities thruout the huge country. Surprisingly enough, the eastern part of Brazil has a density of routes about equal to eastern United States (tho the frequency of flights over them may be considerably lower).

The great cities of the east coast of South America, especially Rio de Janeiro, Montevideo, and Buenos Aires, are closely tied by air to capitals of western Europe. At present the planes of ten nations (Great Britain, Spain, Italy, Netherlands, France, Sweden, Norway, Denmark, Brazil, and Argentine) provide these links by flying across the Atlantic between the bulge of Africa and Northeast Brazil. In each direction there are seventeen flights per week, about the same number as across the Pacific connecting North America with Eastern Hemisphere lands.

Soviet Union

In the Soviet Union there is but one major airline. Known as Aeroflot, it forms a huge system, covering not only European Russia and Siberia, but extending into the periphery zone between Soviet territory proper and the Iron Curtain. A few examples from the Aeroflot network should serve to show how air transportation in the U.S.S.R. follows that of the United States and Canada, other large countries with which we are more familiar. Every day from Moscow two flights leave for Kharbarovsk, four

thousand miles distant, in maritime Siberia on the slopes of the Pacific.

Moscow, and also Leningrad, are tied in closely with all of the major industrial areas of the country, especially those in southern European Russia and in the Ural district. Likewise, Archangel, Murmansk, and other northern cities lie on direct routes from Moscow and Leningrad. Soviet Central Asia, with Tashkent as the central air terminal, is a focal point for routes. There is even a route thru the Kamchatka area, terminating at Petropavlosk. In addition, trunk routes extend from Moscow to the national capitals of Soviet dominated territory, that is, Bucharest, Sofia, Tirana, Budapest, Warsaw, Berlin, Prague, and Helsinki. Beyond the Iron Curtain Aeroflot does not extend as do the international airlines of the Western democracies.

ISLAND GROUPS

Air transportation is particularly important in island groups and over narrow seas. Here the superior speed of the aircraft over surface means of travel is further enhanced by no need for a break in the journey in passing from land to water or water to land. Between London and Paris the fastest train-boat-train journey requires seven and one-half hours; the plane trip one and one-half hours. The Hawaiian Islands, Philippines, East Indies, West Indies, and other archipelagoes have well developed route systems which bring the major islands within each group close to one another in travel time. Before the airplane came to the West Indies passenger travel between Cuba and Hispaniola was largely limited to irregular sailings of freighters on which might be available accommodations. Now, airplanes flit between the two islands, permitting travel at frequent intervals. In many instances small islands are tied to mainland areas by air routes: Norfolk and Lord Howe islands off the east coast of Australia, the Scilly Islands off the southwest coast of England, Ceylon off the southern tip of India, and others. Instead of an occasional steamer to bring people, mail, and supplies, the inhabitants of such offshore islands now have the advantage of knowing they are in close touch with the mainland, and benefit accordingly.

SUMMARY

In the short span of thirty years was developed the pattern of world air route coverage indicated above. At first, the operational

phases of aircraft performance—the ability of man to successfully take-off, fly, and land—primarily determined the extent of commercial aviation. Next, with technological progress, the economic aspects were the limiting factors. Men had difficulty in justifying air traffic at premium costs. Now that the airplane is capable, or nearly capable, of paying its own way a traffic pattern to cover the world can be systematically planned in accordance with the commercial needs of an economically active earth. Only international friction stands as a major stumbling block in the realization of an efficient global air route pattern. At the present time international boundaries, landing rights, and a multitude of restrictive regulations on the part of a country toward aircraft of all other countries alter and distort the route structure from what it would be were the carrying of traffic the prime consideration. Gradually, the impact of the heavy international traffic that does exist, plus the volume of domestic traffic within the various countries, should break down those restrictions which impede a free flow of people and goods thru channels best suited to an interregional economy.

A SOLUTION TO SOME SAN FRANCISCO BAY AREA PROBLEMS—THE REBER PLAN

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Is there a growing city of considerable size anywhere in the industrial world that does not need additional room for the expansion of its industrial and transportation facilities? There probably is not. Furthermore, this need for expansion is to be found usually in the most congested industrial and transportation areas of the given city.

The writer wishes to express his appreciation to the following people and organizations for making information available to him.

Mr. John Reber for helpful information.

Mr. J. M. Server of the *Western Construction News* and

Mr. W. J. Walsh, Secretary, "The San Francisco Bay Project—The Reber Plan" for making available the Nishkian Report. (Nishkian, L. H., "Report on the Reber Plan and Bay Land Crossing to the Joint Army-Navy Board," 1946.)

Figures 1 and 2 are produced from material published by the non-profit organization, "San Francisco Bay Project—The Reber Plan."

ESSENTIAL NEEDS

There is a plan, the Reber Plan, available, which if put into use, would provide additional acreage for the expansion of one of our most crowed port areas—the San Francisco Bay region. Prior to the late war, the population of California doubled every seventeen years. The growth of the Bay area will be impeded without additional space adjacent to waterways.

Besides supplying needed land, the Reber Plan would provide two large fresh water lakes, additional land for transportation facilities, more harbor facilities, a fresh water harbor, and fresh water. Can one think of resources more vital to a flourishing port of first magnitude?

Figures 1 and 2 illustrate the proposed project and the changes that the project would bring to the Bay area. Fig. 1 illustrates the principal features of the project and the advantages that would accrue to the entire Bay region. Fig. 2. illustrates some of the features in more detail.

DEVELOPMENT OF THE PLAN

This plan has received favorable consideration by some civic organizations and has proved of more than passing interest to the Joint Army-Navy Board.

The essential features of the proposed project are: two earth and rock fill moles which will make two fresh water lakes of the north and south arms of the San Francisco Bay, a fresh water ship channel from Pinole Point to Alameda, a shallow fill over three miles wide and 13 miles long on the east shore of the bay, and one or more multiple ship locks.

The man who proposed this plan was certainly not a professional engineer, but he was and is a dreamer who may live to see part of his dream fulfilled.

The Reber Plan is named after Mr. John Reber, who was originally interested in producing stage shows. The idea for this project came to him about 1907 when he was involved in travelling between Oakland and San Francisco. At that time such a trip, one way, required at least two trolly rides, a ferry ride, and considerable time. Mr. Reber more or less forgot his dream until the 1930's when the water problem in the delta area of the Sacramento became acute. At that time Mr. Reber took his plan to L. H. Nish-

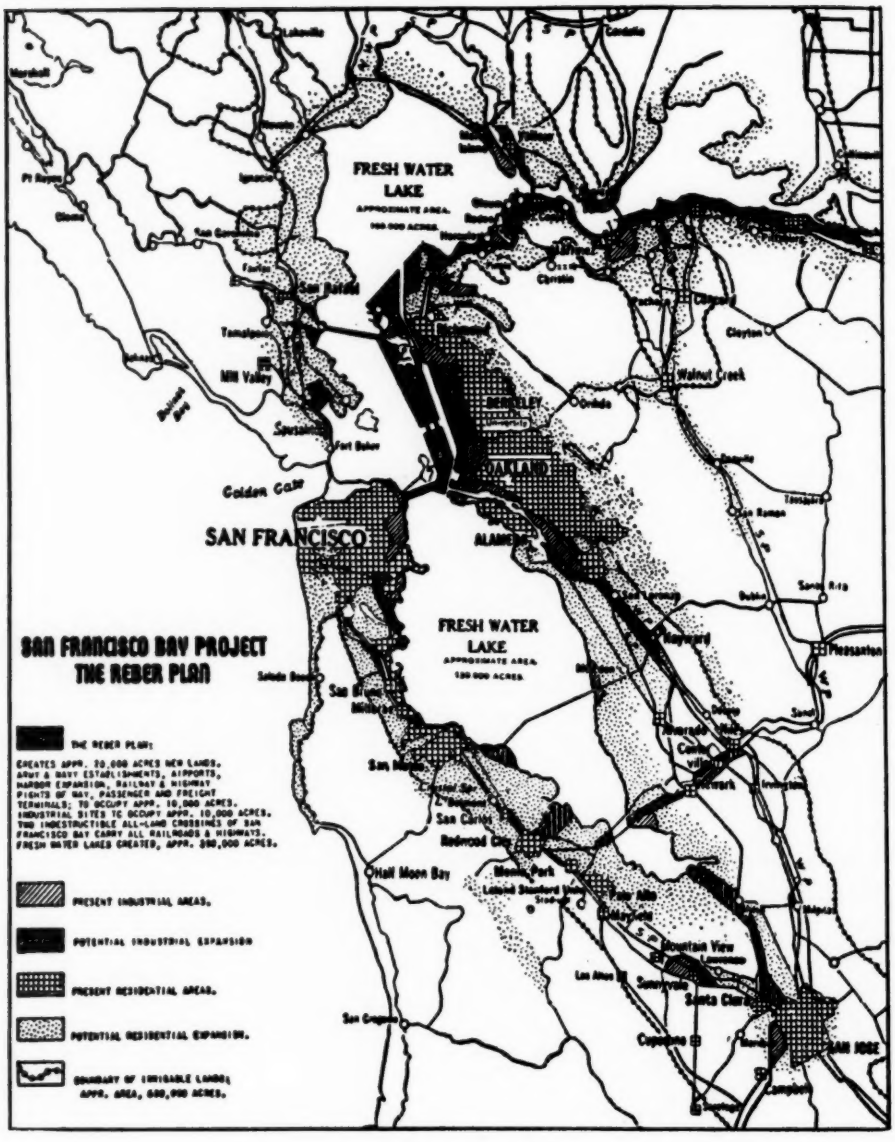

FIG. 1. The Reber Plan

kian, a Bay area consulting engineer, and at his death in June, 1947, Chief Engineer of the Golden Gate Bridge Authority. Mr. Reber is to this day a staunch supporter of his dream and spends considerable time publicising its benefits.

Mr. Nishkian and his employees have spent much time drawing

FIG. 2. Essential Features of the Reber Plan

plans, making surveys, and compiling a very thoro report on the project. All of this was done by Mr. Nishkian without remuneration.

Possible Transportation, Military and Industrial Facilities

As anyone who has travelled to San Francisco via railroad from the east knows, it is necessary to transfer from the train in Oakland to either a ferry or some form of wheeled transportation. The Reber Plan would eliminate this.

The south mole, an earth and rock fill dam 2,000 feet wide and four miles long, would be ample to provide for thru passenger and freight train service to San Francisco. It also would provide up to 50 lanes for automobile traffic. At the present rate of development, it will soon be necessary to construct automobile approaches to San Francisco in addition to the present Bay Bridge. The present bridge was built to carry a maximum of 81,000 vehicles daily. It now carries between 70,000 and 76,000, and congestion is great at hours of peak load. The south mole would eliminate the congestion and the necessity for expensive bridge or tube approaches. The construction of the mole would be relatively simple as water depth is not great.

Additional transportation facilities would be provided between the east and west bay areas by the north mole which would be an earth and rock fill dam some 600 feet wide and four miles long.

The fresh water ship channel would be constructed thru what is now solid ground. This would have a depth of 50 feet and a width varying from 660 feet to one-half mile (See Fig. 2). The water for this channel would be supplied from the San Joaquin and Sacramento rivers, which at present waste their surplus waters by pouring them into the sea. To permit uninterrupted flow of highway and rail traffic between the east and west sides of the bay, tubes under the ship channel would connect the north and south mole with the east side facilities.

Thru the hydraulic fill between the salt water bay and the ship channel would be a series of locks. There would be a slight difference in elevation between the two water bodies. It is desirable to separate the fresh and salt water areas and yet allow ships to pass freely between them.

The hydraulic fill area, shown in solid black in the two illustrations, would require about 796,000,000 cubic yards of material faced with rock. Some of the material would come from the ship channel. The fill would create about 20,000 acres of site suitable for docks, industries, airports and other transportation facilities. This area is equivalent to a considerable fraction of the present area of San Francisco County.

The required rock material, some 19,200,000 cubic yards, for facing the fill can be quarried at water level near by. This would make possible the creation of huge underground storage invaluable for military purposes.

The areas of quarrying and fill would also make possible other military features shown in Fig. 2—a naval base, a torpedo boat base, a number of airports, if necessary, and rail and highway connections among these military establishments which would not be overly subject to damage due to bombing. A single block-buster making a direct hit on the San Francisco Bay Bridge would at present separate San Francisco and Oakland for many weeks. Bombs hitting either of the moles would impair transportation for a few days at the most.

The deep water frontage of the Bay would be increased, providing the area with some 50 to 70 miles of deep salt and fresh water docking space. This would give Bay cities both a large fresh and salt water harbor, with many docking facilities immediately adjacent to the means of land transport. The fresh water ship channel and dockage space would be maintained at constant level; thus, making unnecessary certain adjustments common to ships docked in a water body of changing level. Many ship owners desire their ships to dock in fresh water as it reduces the expense of marine growth removal.

SALT WATER TO FRESH WATER

Perhaps the most striking feature of the project is the changing of a large water body, San Francisco Bay, from a salt to a fresh water type. It can be seen from the illustrations that the fresh water will be supplied by the Sacramento and San Joaquin rivers, rainfall, and run-off into the Bay basin.

Considering the general lack of irrigation water thruout the Central Valley of California, it is conceivable that less water in the future will be allowed to enter San Francisco Bay via rivers than is so allowed at present. It is necessary, however, under existing conditions for Shasta Dam, located on the upper course of the Sacramento, to allow 200,000 acre feet per month to flow into the delta area of the Sacramento at the northern end of San Francisco Bay for salinity control. If this amount were allowed to flow after completion of the Reber Plan, the availability of water in sufficient amounts would be assured.

The two fresh water lakes would have a combined area of

approximately 280,000 acres. Evaporation in the Bay area is about 42 inches per year, or about 980,000 acre feet. There would be an additional loss of at least 500,000 acre feet thru locks, fish ladders, and industrial uses. Balanced against this is the 2,400,00 acre feet of annual flow from Shasta Dam, and an estimated 1,000,000 acre feet of combined annual run-off and rainfall into the Bay basin. It would seem that ample water would be available in even the driest years. The two fresh water lakes would contain about 10,000,000 acre feet of water, the equivalent of the storage in Lake Roosevelt behind Grand Coulee Dam.

The fresh water lakes would be somewhat smaller than the salt water bodies now occupying similar areas. The reduction in size would add tidal marshes and salt flats to agricultural land, home and industrial sites. In the entire Bay region there would be about 600,000 acres added to agricultural land, created by freshening of certain salty areas of the present.

The water for the southern fresh water lake would be supplied by natural drainage into the area plus what additional water was needed being brought in via the fresh water channel. It has been estimated that the southern lake would be completely freshened within six or seven years. This could be accomplished with no effort other than the construction of the two moles and the ship channel with locks. If it is found desirable to freshen the lake more rapidly, drainage each year immediately prior to the rainy season would be helpful. This could be accomplished at low tide by including drainage tubes thru the south mole.

If sufficient water were made available thru the Sacramento River, this fresh water lake could supply much needed irrigation water to the Santa Clara Valley, located south of the southern end of the south lake. This valley has developed all its immediately available water resources.

One of the areas which would be most influenced by the change from salt to fresh water would be the rich agricultural delta area of the San Joaquin and Sacramento rivers. Here are many islands protected by levees. The fresh water lake would be maintained at a water level of about mean sea level. A spillway, in the north mole, would prevent the lake rising above this level. It would be necessary to strengthen about 500 miles of peat and 200 miles of silt levees protecting the delta islands because of the to be maintained water level.

Against these difficulties, one can list many advantages which

would appear to far offset the disadvantages. Intrusions of salt water into the delta area would be eliminated, thus eliminating salinity control measures that are now necessary. Salt marsh areas would be reclaimed for agriculture—land near a great market. There would be a one-way current above the dam thereby doing away with certain currents which are a hindrance or inconvenience to shipping. The lake level would be at a greater height than the present bay low tide giving a deeper channel to various points. The availability of fresh water at the high level suggested would permit irrigation from the fresh water lake with reduced pumping costs to the delta farmers.

The north mole, besides providing transportation facilities between the east and the west sides of the bay, would protect the delta area from salt water floods, which have occurred in the past as a result of high tide aided by favorable wind direction.

DISADVANTAGES

It would appear that the Reber Plan is the answer to a number of problems confronting the growing San Francisco Bay area. There are, however, some disadvantages which should be mentioned. These are:

1. The expense involved in the use of ship locks.
2. The maintained water level of the delta area would necessitate additional levee protection.
3. The increased cost of pumping drainage and leakage from inside the levees. (This conceivably might be offset by reduced costs for pumping irrigation water.)
4. The possibility of silting behind the north mole. This is calculated so that such a process would amount to about 1/6 per cent a year. At this initial rate it would be 450-600 years before the bay became filled with silt. Studies now being conducted in various places in the United States indicate that the solution to the problem of silting behind dams may not be far off.
5. The increase in the size of the bar at the entrance to the Golden Gate.
6. The possibility of displacement caused by fill and moles.

Some authorities feel that decreasing the amount of flow out of the bay may increase the building processes of the off-shore bar.

CONCLUSION

It is this writer's opinion that the advantages are many more than the disadvantage of this project. It would seem that land, transportation, and water would be supplied to the San Francisco Bay Area—three resources which are needed in increasing amounts. Mr. Nishkian, in his report, estimated that the essential

features of the project would cost some $200,000,000 while the construction of two newly proposed bay bridges to relieve the automobile traffic congestion alone would cost about the same.

AUTOMOBILE LICENSES AS VISUAL AID MATERIAL IN THE TEACHING OF GEOGRAPHY

ROBERT M. CRISLER
Washington University, St. Louis, Missouri

Geography teachers were reminded of the value of postage stamps as visual aid material in the teaching of geography in a recent article by James K. Anthony.[1] Automobile licenses provide another type of visual aid of a somewhat similar nature.

Children and even adults have found it fascinating to try to see a car from every state in the Union. Two small boys in a Missouri college town saw cars bearing licenses from every state in the Union on a college commencement day. This pastime might be more frequently encouraged by geography teachers to supplement classroom work. It should serve to make the location of various states on a map and study of those states of greater interest and value.

Most license plates are relatively easy to distinguish even at considerable distances with only a little practice altho there may be confusion at first between states using the colors of black and white. A few state licenses are distinctive in that they indicate the shape of the state (for example, Montana, Pennsylvania, and Tennessee). Some states put distinctive slogans or symbols on their licenses, such as (1) Vacationland (Maine), (2) Green Mountains (Vermont), (3) America's Dairyland (Wisconsin), (4) Peach State (Georgia), (5) Opportunity Land (Arkansas), (6) World Famous Potatoes (Idaho), (7) The Friendly State (Utah), (8) The Land of Enchantment (New Mexico), (9) Grand Canyon State (Arizona).

In any ordinary town, some out-of-state licenses will be seen more frequently than others. In the Middle-West, Vermont, Delaware, and Nevada are normally the hardest to find. On any given day it is usually possible to see licenses from half the states. One

[1] Anthony, James K., "Postage Stamps as Visual Aid Material in the Teaching of Geography," Journal of Geography, XLVII, (November, 1948), pp. 325-328.

expects to see more out-of-state cars from nearby states than from more distant parts of the country. Licenses from such states as California, New York, and Pennsylvania appear more frequently, however, due to the large number of motor vehicles registered in those states. The two main considerations then as to number of out-of-state licenses seen from a given state in a given town or area are (1) geographic nearness, and (2) number of registered motor vehicles in the given state. For example, even tho Utah is closer to the Middle-West than is California, there are eighteen times more vehicles bearing California license plates in the country than there are vehicles bearing Utah license plates. Thus, California licenses are seen much more frequently than Utah licenses in the Middle-West. Other considerations, however, may enter into the picture. For example, the dual residence of wealthy retired people is reflected in the number of Florida and California licenses seen during the summer in the Middle-West and East. Also, if one is watching for licenses along a highway, the direction of that highway will be reflected in the licenses seen. On an east-west highway, licenses from states to the east and west will likely be more numerous, whereas on a north-south highway, licenses from states to the north and south will likely be most numerous. Thru traffic tends to follow major United States highways such as 1, 6, 10, 11, 20, 30, 40, 41, 50, 66, 80, 90, 99, and 101. A count of various licenses from different states on any such highway and the interpretation or analysis of the count can be useful in supplementing classroom study.

Two states, Mississippi and Kentucky, print the county names on their licenses. Even for a person living in those states it is not an easy matter to see licenses from every county. The search for licenses from different counties, however, may be of considerable value if the student locates these counties on a map and is encouraged to learn the basic geographic characteristics of the states in which they are located. The student may note that licenses from urban counties are more numerous than licenses from rural counties, and in some cases distribution of licenses from different rural counties may reflect differences in type and value of agriculture. It is also possible for a student or class to plot trading areas of trade centers from data obtained in counting automobile licenses.

Altho Mississippi and Kentucky are the only states which print county names on their licenses, several other states assign numbers

or letters to different counties or use some system whereby it is possible to ascertain readily what locality in a state a particular license was issued. For example, licenses starting with "1-" may represent the most populous county in the state. This is true, for example, in the case of Kansas where licenses starting with "1-" represent Wyandotte County (Kansas City), "2-" licenses represent Sedgwick County (Wichita), and "3-" licenses are from Shawnee County (Topeka). There are 105 counties in Kansas so any license beginning with a number over 100 is rare since it represents a sparsely populated county. For example, Greeley County in western Kansas has a total population of 1,638. Its licenses start with "105-" and are extremely rare outside of Greeley and adjoining counties. Tennessee is another state following the same system with the exception of "1-" licenses which represent the county (Davidson) in which the state capital (Nashville) is located. Therefore, Shelby County (Memphis) which is the most populous county in the state is assigned the "2-" licenses.

In Iowa, the licenses are assigned to counties in alphabetical order so that "1-" licenses are from Adair County. More frequently observed Iowa licenses include those starting with "7-" from Black Hawk County (Waterloo), "57-" licenses from Linn County (Cedar Rapids), "77-" licenses from Polk County (Des Moines), "82-" licenses from Scott County (Davenport), and "97-" licenses from Woodbury County (Sioux City). A number of states, of course, have no real system of issuing automobile licenses to afford easy identification of the city or county within a state where the license was issued.

Obviously to observe automobile licenses one does not have to travel long distances. Good spots for observing besides well-traveled streets or highways, include parking lots, around college campuses, in national parks or other places which attract tourists, in Washington, D.C., or in any city when a large convention of some kind is being held. Teachers should not forget the possibility of students reporting automobile licenses from foreign countries, particularly the various Canadian Provinces and Mexican states, as well as licenses from all 48 states, the District of Columbia, and such United States possessions as Hawaii and the Canal Zone.

ANNUAL MEETING OF THE THIRTY-FOURTH YEAR NATIONAL COUNCIL OF GEOGRAPHY TEACHERS

The meeting of the thirty-fourth year of the National Council of Geography Teachers indicated a development of interest in the many facets of geographic education. The meeting was held at the Palmer House, Chicago, on November 26 and 27. More than four hundred members and guests of the National Council were registered. The meeting was held at the same time and place as the meeting of the National Council for the Social Studies.

Professor Floyd F. Cunningham, President of the Illinois Council of Geography Teachers, greeted the National Council at the First General Session on Friday morning, November 26. Loyal Durand, Jr., responded on behalf of the National Council. Claude E. Hawley, Associate Chief of Social Sciences, U. S. Office of Education, read a paper entitled "Geography as Seen from the United States Office of Education." This paper had been prepared by Dr. Otis W. Freeman, formerly Specialist for Geography in Higher Education in the U. S. Office of Education. Professor J. Russell Whitaker concluded the First General Session with a paper on "Historical Geography in School and College."

The Second General Session followed at 10:45 A.M. with two papers. The first was read by Professor Neville V. Scarfe, Institute of Education, University of London, and Visiting Professor, Syracuse University, and was entitled "Type of Geography Presented in the Primary and Secondary Schools of England." The second paper dealt with "The International Geographical Union, 1948" and was read by Professor George B. Cressey. Time was permitted for discussion following each of these papers.

A joint luncheon was held Friday noon with the National Council for the Social Studies. At this luncheon, the 19th Yearbook of the N.C.S.S. was formally presented. Mrs. Dorothy Merideth, of the U. S. Office of Education presided, and short talks were given by Clyde F. Kohn, Editor of the Yearbook, Miss Edith P. Parker, Mrs. Katheryne Thomas Whittemore, and Professor J. Russell Whitaker. Dr. Kohn spoke on "The Yearbook, Its Purposes and Its Content"; Miss Parker on "Common Goals"; Mrs. Whittemore on "How the Teacher May Use the Yearbook"; and Professor Whitaker on "Questions Raised by the Yearbook."

The luncheon meeting was followed in the afternoon by four sectional meetings devoted to (1) Conservation, (2) Field Trips, (3) Color Transparencies, and (4) Gamma Theta Upsilon. At Section 1, Halene Hatcher, formerly Assistant Specialist for Geography and Conservation, Division of Secondary Education, U. S. Office of Education, spoke on "Conservation Education or Tragedy"; Dr. C. L. Dow of Ohio University, on "Geographical Aspects of Ohio's Conservation Laboratory," and Professor Arch C. Gerlach, of the University of Wisconsin, on "Utilization of Field Areas in Teaching Conservation at the University of Wisconsin." Professor S. S. Visher of Indiana University served as chairman of this section, and Byron K. Barton of Eastern Illinois State College acted as secretary.

Section 2 dealt with Field Trips and the following papers were delivered: A. W. Watterson "Illinois State Normal University Field Courses"; George W. Hoffman, "A Geography Lecturer's Experience with the Marshall Plan in Action in Europe Tour," and Henry Warman, Clark University, "The Annual Fall Field Course, Clark Graduate School of Geography." The paper read by Dr. Warman was written by Dr. W. Elmer Ekblaw, Clark University. Chairman of Section 2 was Miss Pauline P. Schwartz, New Haven State Teachers College, and James H. Glasgow, Michigan State Normal College, Ypsilanti, acted as secretary.

The third section was devoted to an open discussion of the Committee on Color

Transparencies of the National Council, of which Miss Elizabeth Eiselen, of Wellesley College, is chairman. Miss Eiselen, who also acted as Chairman of this section, opened the discussion with a talk on "Values and Problems in the Use of Color Transparencies." She based her facts on results of the Color Transparencies Questionnaire which had been sent to all members of the National Council during the year. Fred E. Dohrs, of Northwestern University, spoke on "The Value of Color Transparencies Illustrated." An open discussion led by Miss Marion I. Wright, Rhode Island College of Education, on "The Future of Color Transparencies in the Teaching of Geography," concluded the sectional meeting. Miss Adelaide Blouch, Hays Elementary School, Lakewood, Ohio, was secretary of this sectional meeting.

The fourth sectional meeting was devoted to a round-table discussion on worthwhile projects for local chapters. Professor Warren Strain, State Teachers College, Slippery Rock, Pennsylvania, acted as chairman of the meeting, and Miss Ina C. Robertson, State Teachers College, Valley City, North Dakota, served as secretary. Participants of the round table consisted of representatives from the Mu, Rho, Alpha, and Kappa chapters of Gamma Theta Upsilon. These chapters were represented, respectively, by Miss Mable Schauland, David Winnett, Voris King, and Monroe Coulter.

At four o'clock, a tea was sponsored by the Geographic Society of Chicago, and the Departments of Geography in the University of Chicago, Northwestern University, the Chicago Teachers College, and the University of Illinois, Navy Pier School.

The annual banquet was held on Friday evening. Winners of the A. E. Parkins and Ellsworth Huntington Prizes were announced by Professor George J. Miller, Indiana University, Editor of the JOURNAL OF GEOGRAPHY. Recipients of these two prizes were:

A. E. Parkins Prize to Professor J. R. Whitaker for his article entitled, "International Aspects of Conservation."

Ellsworth Huntington Prize to Miss M. Melvina Svec for her articles on "Eurasia."

The Distinguished Service Award was made by Miss M. Melvina Svec, chairman of the National Council Distinguished Service Award Committee. The award was given to Professor S. S. Visher, of Indiana University, for his outstanding contributions to geographic education and research.

Professor Preston E. James of Syracuse University, delivered the banquet address. He spoke on "The Treatment of Controversial Topics in Geography." Following his address, there was an informal reception for Past Presidents of the National Council.

The Third General Session of the annual meeting was held on Saturday morning, November 27, with Earl B. Shaw, State Teachers College, Worcester, Mass., and First Vice-President of the National Council, presiding. The theme of this session was "Geography and World Understanding." Papers were read by G. Etzel Pearcy, of Trans-World Airlines, Charles C. Colby, University of Chicago, Sidman P. Poole, University of Virginia, Eugene Van Cleef, Ohio State University, and J. Warren Nystrom, University of Pittsburgh. The papers presented by these geographers are to be printed in the JOURNAL OF GEOGRAPHY and will be reproduced as Professional Paper No. 9 of the National Council.

The State Coordinators held a luncheon at 12:15 on Saturday at which the work of the past year was reviewed and plans were announced for the coming year. State Coordinators now represent the National Council in thirty-three states.

The Second Annual General Assembly of the National Council was held Saturday afternoon, with President Thomas F. Barton, presiding. (See Secretary's Report of General Assembly.) The Assembly meeting concluded the thirty-fourth meeting of the National Council of Geography Teachers.

MINUTES OF THE SECOND GENERAL ASSEMBLY

The Second General Assembly of the National Council of Geography Teachers was held at two o'clock on Saturday, November 27, 1948, at the Palmer House, Chicago, with President Tom Barton, presiding. Dr. Barton opened the meeting with a welcome to the members and extended his thanks to those who had given their time and effort during the past year to National Council affairs, and expressed his appreciation to those who had helped to arrange the annual meeting.

The Secretary presented a report on membership and on his activities as Secretary during 1948. He reported that the membership as of November 20, was 1035, with approximately 400 of this number being Fellows of the National Council, and 51 contributing members.

The Treasurer, John H. Garland, reported on the "Financial Status of the National Council." His report will be printed in full later.

Richard L. Tuthill, University of Kentucky, chairman of the Aviation Committee of the National Council reported on "The Status of the Interrelationship between Geography and Aviation."

Henry J. Warman, Clark University, chairman of the National Council Committee on Survey of Research in Geographic Education spoke on "Survey of Research in Geographic Education."

Mrs. Katheryne Thomas Whittemore, chairman of the N.C.G.T. Committee on Preparation of Lists and Bibliographies of Maps, reported on "Facilitating the Use of Maps."

Miss Zoe A. Thralls, Chairman of the N.C.G.T. Committee on High School Curriculum, told of the "Preparation of the Manuscript for Geography in the High School."

Miss M. Melvina Svec, chairman of the Publications Committee, spoke of "The Publications Committee in Action."

President Barton then announced the establishment of new committees and their membership.

The Resolutions Committee read the following report and moved that it be accepted. The motion was carried.

REPORT OF RESOLUTIONS COMMITTEE

The National Council of Geography Teachers wishes to express appreciation to a number of people and organizations who have rendered outstanding services for our benefit:

To the National Council for the Social Studies, for the publication and distribution

of the current yearbook, "Geographic Approaches to Social Education." This book will be highly useful to geography and hence the N.C.G.T. is deeply grateful to the N.C.S.S. for making it possible.

To Dr. Clyde Kohn, our secretary for the past three years, who has asked to be relieved of this position. The Council appreciates the excellent service he has rendered, both as secretary and as editor of the 1948 Yearbook.

To Miss Cora P. Sletten, who for twenty-three years was assistant editor of the JOURNAL OF GEOGRAPHY. Her excellent service was unstintingly rendered and her retirement is not due to lack of willingness to continue, but to the removal of the JOURNAL.

To Dr. George J. Miller, editor of the JOURNAL, whose fine service for twenty-eight years, rendered without compensation, was publicly recognized by the Chicago Geographic Society last February when he was presented with a citation for his editorial work.

To the President and Regents of the State Teachers College, Mankato, Minnesota. For twenty-eight years the JOURNAL OF GEOGRAPHY, the organ of the National Council of Geography Teachers, was edited by your Professor George J. Miller with the assistance of your Professor Cora P. Sletten. The Council is grateful for such facilities and aid as you rendered in this important service to geographic education. This service made your institution widely known by teachers of geography.

To President H. B. Wells and the Trustees of Indiana University for the facilities and the aid the University is now affording the JOURNAL OF GEOGRAPHY. It is being edited by your Professor George J. Miller with the assistance of your Professor Thomas F. Barton. The JOURNAL's wide influence in geographic education will be augmented by these new facilities, and at the same time Indiana University will achieve widened influence and respect.

To the authors of Parkin and Whitaker: *Our Natural Resources and Their Conservation,* who individually have waived royalties, half of which go to the National Council of Geography Teachers. Since the total thus received exceeds five thousand dollars, and as this money has been very useful in the work of our Council, we wish to express gratitude to the following living authors of chapters: J. R. Whitaker, W. W. Atwood, O. E. Baker, N. A. Bengtson, H. H. Bennett, Robert M. Brown, Loyal Durand, Jr., W. H. Haas, H. H. Martin, George J. Miller, E. C. Prophet, G. T. Renner, V. E. Shelford, Guy H. Smith, J. Russell Smith, Helen M. Strong, S. S. Visher, Frank E. Williams, and L. A. Wolfanger.

To the contributing members of the Council. The Council's need for additional income has been partly met by ten-dollar dues paid by these members. The list for 1948 is printed in the Annual Meeting program and will be published in the JOURNAL.

To the teachers of geography who have retired recently and are still living and who have been exceptionally successful in stimulating their students or in aiding other students by their publications clearly merit expressions of appreciation by the National Council of Geography Teachers. Many of these persons have also been active in the Council; several of them served as president. The following list is incomplete. Other persons will be honored later, while, it is hoped, they are yet alive: Alison E. Aitchison (Cedar Falls, Iowa), W. W. Atwood (Worcester, Mass.), H. H. Barrows (Chicago), Robert M. Brown (W. Barrington, R.I.), R. D. Calkins (Mt. Pleasant, Mich.), Rose B. Clark (Lincoln, Neb.), D. H. Davis (Minneapolis, Minn.), R. E. Dodge (Mansfield Center, Conn.), Alice Foster (Chicago), W. H. Haas (Evanston, Ill.), Lucretia Harrison (Kalamazoo, Mich.), G. D. Hubbard (Oberlin, Ohio), C. C. Huntington (Columbus, Ohio), Mark Jefferson (Ypsilanti, Mich.), W. D. Jones (Harbert, Mich.), Harold Kemp (Cambridge, Mass.), E. E. Lackey (Lincoln, Neb.), George McBride (Los Angeles, Calif.), L. O. Packard (Needham, Mass.), Douglas Ridgley (Bloomington, Ill.), J. Russell Smith (Swarthmore, Pa.), J. E. Switzer (Bloomington, Ind.), W. M. Tucker (Fresno, Calif.), O. D. von Engeln (Ithaca, N.Y.), Annie L. Weller (Charleston, Ill.).

To those who sponsored the tea: The Chicago Geographic Society, and the Departments of Geography of Northwestern University, the University of Chicago, the University of Illinois Pier School, and the Chicago Teachers College.

To those who contributed funds for the publication of our annual program: Rand McNally and Company, Denoyer-Geppert Company, and A. J. Nystrom and Company.

To the members of the Local Arrangements Committee and Directors of Official Host Activities. To those who arranged accommodations for the meeting, the Palmer House and its staff, particularly Mr. A. C. Schey.

Be it further resolved that

Whereas, Dr. Otis W. Freeman has resigned as Specialist for Geography in Higher Education, U. S. Office of Education; and *whereas,* the position is of vital importance in American education, the Secretary is instructed to send the following resolution to the U. S. Office of Education: Be it resolved that we urge the U. S. Office of Education to appoint a highly qualified geographer to succeed Dr. Freeman as Specialist for Geography in Higher Education.

The Resolutions Committee moves that this report be adopted and printed in our JOURNAL and that Secretary Kohn be instructed to send appropriate letters of appreciation to the various individuals and organizations here mentioned.

RUBY HARRIS, *Chairman*
CYRIL STOUT
STEPHEN S. VISHER

Mrs. Katheryne Thomas Whittemore, chairman of the Nominating Committee, presented the following slate of candidates for office in 1949-50:

President: Earl B. Shaw, State Teachers College, Worcester
First Vice-President: Loyal Durand, Jr., University of Tennessee, Knoxville
Second Vice-President: Harry O. Lathrop, Illinois State Normal University, Normal
Secretary: M. Melvina Svec, State Teachers College, Oswego, N.Y.
Treasurer: John H. Garland, University of Illinois, Urbana
Executive Board Members: Thomas F. Barton, Clyde F. Kohn, Kenneth Bertrand

It was moved and seconded that the Secretary be instructed to cast a unanimous ballot for the candidates presented by the Nominating Committee. The motion carried.

First Vice-President, Earl B. Shaw, spoke of "Prospects for 1949." Dr. Shaw will assume the responsibilities of President on February 1, 1949.

The meeting was then adjourned.

Respectfully submitted,
CLYDE F. KOHN, *Secretary*

THE NATIONAL COUNCIL AT WORK

The strength and effectiveness of the National Council of Geography Teachers can be greatly improved by the activities of its coordinators. The following list shows the N.C.G.T. coordinating personnel as of January, 1949.*

STATE COORDINATORS*

Alabama: Ethel Marshall, Alabama College, Montevallo, Alabama
Arizona: Agnes M. Allen, Arizona State College, Flagstaff, Arizona
Arkansas: A. E. Burdick, Arkansas State Teachers College, Normal Station, Conway, Arkansas
California: V. Calvon McKim, Fresno State College, Fresno, California
Connecticut: Pauline P. Schwartz, New Haven State Teachers College, New Haven, Connecticut
District of Columbia: Norman Carls, 2106 38th St. S.E., Washington 20, D.C.
Florida: Annice D. Elkins, Box 350, Kissimmee, Florida
Illinois: Harry O. Lathrop, Illinois State Normal University, Normal, Illinois
Indiana: John C. Finney, 2920 Columbus Ave., Anderson, Indiana
Iowa: Lee O. Yoder, Drake University, Des Moines, Iowa
Kansas: Anne M. Goebel, Kansas State Teachers College, Emporia, Kansas
Kentucky: Richard L. Tuthill, University of Kentucky, Lexington, Kentucky
Massachusetts: Leonard O. Packard, 78 Warren St., Needham, Mass.
Michigan: Vivian Greenhoe, Manistee High School, Manistee, Michigan
Minnesota: Leonard O. Wilson, Carleton College, Northfield, Minnesota
Mississippi: E. E. Hall, Mississippi Southern College, Hattiesburg, Mississippi
Missouri: James E. Collier, University of Missouri, Columbia, Missouri
Nebraska: Nels A. Bengtson, University of Nebraska, Lincoln, Nebraska
New England: Elizabeth Eiselen, Wellesley College, Wellesley, Massachusetts
New Hampshire: Ella O. Keene, Keene State Teachers College, Keene, New Hampshire
New Jersey: Adelbert K. Botts, New Jersey State Teachers College, Trenton, New Jersey
New York: Katheryne T. Whittemore, State Teachers College, Buffalo, New York
North Dakota: Ina C. Robertson, State Teachers College, Valley City, North Dakota
Ohio: James R. Beck, Kent State University, Kent, Ohio
Oklahoma: John W. Morris, University of Oklahoma, Norman, Oklahoma
Oregon: J. Granville Jensen, Oregon State College, Corvallis, Oregon
Pennsylvania: Frances M. Hanson, University of Pittsburgh, Pittsburgh, Pennsylvania
Rhode Island: Marion I. Wright, Rhode Island College of Education, Providence, Rhode Island
South Carolina: Julian J. Petty, University of South Carolina, Columbia, South Carolina
Virginia: Sidman P. Poole, University of Virginia, Charlottesville, Virginia
West Virginia: Roy T. Hickman, Concord College, Athens, West Virginia
Wisconsin: Margaret S. Chew, State Teachers College, La Crosse, Wisconsin

* If states have been omitted, no coordinators are functioning as yet for those states.

NATIONAL COUNCIL COORDINATORS

Thomas Frank Barton, Indiana University, Bloomington, Indiana, NCGT and AAG
R. G. Buzzard, Eastern Illinois State Teachers College, Charleston, Illinois, NCGT and National Association of School Administrators
Erna G. Gilland, California, Pennsylvania, NCGT, NEA and WOTP
Clyde F. Kohn, Northwestern University, Evanston, Illinois, NCGT and NCSS
Villa B. Smith, 2104 Stearns Road, Cleveland, Ohio, NCGT and Central Association of Science and Mathematics

EARL B. SHAW, *President*

INTEREST STIMULATING DEVICE

TWENTY FOREST TREE PRODUCTS OTHER THAN ORDINARY LUMBER

In the second column below, name a tree which supplies a raw material important in the preparation of the commodity listed in column 1. In column 3 name an important region where these forests are found.

Product	*Tree*	*Locality*
1. Bottle stoppers		
2. Edible nuts		
3. Edible oils		
4. Fishing rods		
5. Fruits		
6. Life preservers		
7. Moth balls		
8. Paper		
9. Quinine		
10. Rayon		
11. Rubber		
12. Sage		
13. Silk		
14. Spice		
15. Sugar		
16. Tannin		
17. Tea		
18. Turpentine		
19. Varnish		
20. Wax		

W. O. BLANCHARD, *Urbana, Ill.*

EDITORIAL NOTES AND NEWS

The New York State Geographical Association will hold its annual meeting on April 30 at the New York State College for Teachers at Buffalo. The tentative program includes papers on the geography of New York State, a field trip and a dinner. Further information may be secured from any one of the officers. The officers are: President: Hibbard H. V. Kline, Syracuse University; Secretary: Olive Fish, State Teachers College, Cortland; Convener: Katherine Thomas Whittemore, New York State College for Teachers, Buffalo.

CORA P. SLETTEN, State Teachers College, Mankato, Minnesota, is sailing on the Queen Mary in March for a five months' study of western Europe. She will represent the N.C.G.T. at the meetings of the International Geographical Congress meeting in Lisbon in April. She is traveling with Dr. Agnes Larson, head of the history department of St. Olaf College, Northfield, Minnesota. Dr. Bernard Schockel of Aurora, Indiana, is teaching at Mankato during Miss Sletten's absence in the spring and summer quarters.

Subject to confirmation by the Canadian Parliament, the Government of Newfoundland, and the Parliament of the United Kingdom, the union between Canada and Newfoundland will become effective April 1, 1949. On this date Canada will take over various Newfoundland services including customs and excise. The Canadian Government has declared that it is not intended that important restrictions shall interfere with the maintenance of industry in Newfoundland.

Research experts believe that a new farm implement, called the brushland plow, will prove very beneficial to great expanses of western rangeland. The new implement is designed to eradicate sagebrush which chokes out the grass. This brushland plow is a disk model which combines features of both the American and Australian machines. One of the unique features is that the paired disks are attached to knee-action assemblies. During Forest Service experiments 97 per cent of the sagebrush was removed. After its removal the land is quickly seeded to grass. Crested wheat grass, imported from Siberia, is widely used for reseeding. Original range research stations of the Forest Service were located at Ogden, Utah and Missoula, Montana. Other stations are now located at Fort Collins, Colorado; Tucson, Arizona; Portland, Oregon and Berkeley, California.

The new officers of the Association of North Dakota Geographers are: President, Viola M. Bohn, Bismarck; Vice President, B. Lloyd Wells, University of North Dakota, Grand Forks; Secretary, E. Helen Iorns, Department of Public Instruction, Bismarck; Treasurer, Earl Shearer, State Teachers College, Minot; and State Coordinator, Ina Cullom Robertson, State Teachers College, Valley City. That this organization has been very active is evident by reading its bulletin—the ANDG. During its fall meeting, the members took a field trip to the Turtle Mountain region, Lake Metisgoshe and the Lake Souris Basin. This organization also sponsored a Geography Sectional Program when the North Dakota Education Association met in Grand Forks last fall. At the present time a spring meeting is being planned to be held in Bismarck sometime in late April or May.

According to reports from the Munitions Board in Washington, D.C., the program of stockpiling strategic war materials is well under way. As of February, 1949 this

stockpile was 39 per cent complete. The program which was launched July, 1946 has been expanding rapidly in recent months. Because of the troubled international situation the purchases are being stepped up altho they take a sizable slice out of civilian supplies of lead, zinc and copper. Chairman Donald F. Carpenter reports that stockpiling quotas for thirty-four of the sixty-eight items on the "critical" list have been filled.

The intercollegiate division of Geography and Geology at the University of Florida has been discontinued and a Department of Geography has been organized as a part of the College of Arts and Science. Dr. Sigismond deR. Diettrich is head professor in the department.

DR. LUELLA DAMBAUGH, Department of Geography, University of Florida, conducted a field course in Cuba during the Christmas holidays.

MR. LAWRENCE A. KRATZ, formerly at the University of South Carolina, is the first geography faculty member of Franklin and Marshall College, Lancaster, Pennsylvania.

DR. HENRY BECKER, Florida State University, is serving as part-time Resource Use and Geographic Consultant to the Florida State Department of Education. Dr. J. Riley Staats, University of Miami is serving as a member of the Florida Resource Use Committee.

MR. WILLIAM REESE WALKER, who last fall was appointed assistant professor and assistant head of the Geography-Geology Department, University of Georgia, Atlanta Division, is the first professionally trained geographer to work on the Atlanta campus.

MISS ETHEL MARSHALL, geographer at Alabama State College, Montevallo has received a *Conservationist of the Year in Alabama* in 1948 plaque from the Alabama State Conservation Department and the Alabama Wildlife Federation. Miss Marshall was recognized because of the excellent work she has done in introducing and offering the resource-conservation training program at Alabama State College. It is interesting to note that the conservation training program is in the Liberal Arts division rather than in the Education division.

MISS MARY E. FONTAINE, formerly of the Geology and Geography Department at Mississippi State College, Starkville, is now on the staff of the Geography-Geology Department at the University of Georgia.

HAROLD V. MILLER has been promoted to executive director of the Tennessee State Planning Commission. Mr. Miller, with the aid of a thirty member staff, now plans and directs the entire Tennessee state planning and development program from his Nashville office.

The geography staff at Florida State University is increasing in number. Recent additions to the staff are Mr. David E. Christensen and Luther H. Guleck, Jr.

MR. WILLIS T. GEHRKE is the most recent addition to the geography staff at the University of Florida.

GEOGRAPHICAL PUBLICATIONS

Louise A. Boyd. **The Coast of Northeast Greenland,** with Hydrographic Studies in the Greenland Sea. American Geographical Society, Broadway at 156th Street, New York City. 1948. 339 pp., 194 figs. most of which are photographs, index; accompanying case, containing seven plates of maps and five panoramas. **$6.00.**

This report of the Louise A. Boyd Arctic Expeditions of 1937 and 1938 was not made available sooner for reasons of national security. Casual study of only the photographs, pin-pointed in terms of location, and the hydrographic data, will convince one that the government was justified in requesting that it not be published during the war. But the findings of significance to the military make up just a small part of the report's total content.

Most geographers are acquainted with the account of Miss Boyd's expedition of the summer of 1933, *The Fiord Region of East Greenland,* published in 1935 by the American Geographical Society. Intensive study on that trip was made in the King Oscar and Franz Josef Fiords, and their tributary fiords, between latitudes 72° and 74° N. The same locale was the principal focus of attention in 1937; in 1938 they were able to skirt the coast to Ile de France, a few tens of miles south of latitude 78° N. before being blocked by pack ice. Miss Boyd has devoted a lifetime to the study of the Greenland Sea and Arctic ice and water north of Western Europe. The 1938 expedition was the sixth (1926, 1928, 1931, 1933, 1937) organized and financed by her. Miss Boyd's first trip into the area was in 1924, on a tourist steamer.

As on previous expeditions, expert talent was aboard in 1937 and 1938: geology—Richard Foster Flint (1937), A. L. Washburn (1937), F. Eyolf Bronner (1938); botany Henry J. Oosting (1937); hydrography, terrestrial photogrammetry, and magnetic observations—James M. LeRoy (1937 and 1938); surveying—Fred W. Buhler (1937 and 1938), and radio—A. F. Hilferty (1938).

Anyone who enjoys meaningful photography will be delighted with the scores of pictures taken by Miss Boyd. They are all black and white because of the freedom thus afforded with respect to light conditions. Flash bulbs were used for close-ups. Excellent focus, composition, and significance characterize each photograph. A large proportion of them were taken from vantage points that required lugging the bulky equipment up several hundred feet on steep slopes of coarse mechanically weathered rock, and of glacial gravels, with ice just a few inches below the surface.

The narrative of the expeditions was written by Miss Boyd. It comprises approximately one-fourth of the volume. Well executed location maps, and close insertion of photographs near text references, make for intelligible reading. The result is a highly realistic feel of the terrain.

The report of Dr. Flint constitutes more than one-third of the book. His field studies were concerned primarily with general morphology, glaciers and glaciation, emerged shorelines, weathering, and mass-wasting. Shown clearly in his report are his careful observation and recording of detail, full bibliographic accounting, recognition of multiple hypotheses, and a willingness to suspend judgment. These admirable characteristics are found as well in the remainder of the volume which is devoted to shorter presentations of the results of the other investigations undertaken.

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